Raising EAI Standards

Looking at the development of the EAI market and the effects of the emergence of standards

April 2003

A white paper from Steve Craggs

Vice-Chairman, EAI Industry Consortium

Table of Contents

1.0 Executive Summary

Over the last 10 years, business integration technology has become vitally important for many companies because it is at the heart of solutions responding to a number of key business initiatives of the times, such as:

- Mergers and Acquisitions
- eBusiness and the Web
- Customer Relationship Management (CRM)
- Straight-Through Processing (STP)
- Supply Chain Management (SCM)
- Legislation such as industry deregulation and 'T+1' trading

The market for this integration technology, most commonly referred to as the EAI (Enterprise Application Integration) market, has changed significantly over the years as have business conditions and needs, and it promises to change even more in the future as EAI continues to become more and more established as mainstream IT technology. Initially the EAI vendors pretty much controlled the market, dictating the market requirements, but gradually the increasing surge of EAI has resulted in more and more attention being paid to the business needs of the end-user companies investing in the technology.

This paper considers the changing dynamics of the EAI market and how these dynamics are likely to play out, focusing particularly on one aspect that could prove a real paradigm shift – the emergence of standards. The conclusion that Saint draws should be encouraging to any company looking to invest in EAI as a means to deliver improved business integration, namely that within this market:

- Business dynamics will become considerably more attractive
- Business service will be improved
- Business risk will be reduced

But, as always, making the right choice of vendor is critical, and this paper points out the factors that will decide the likely winners and losers in this market. The conclusions reached suggest that the likely winners will be:

- Existing market leaders who face the pain of embracing standards seriously
- Standards-based vendors who differentiate themselves with superior implementations; for instance, around 'production' values in their offerings.

2.0 Introduction

Ever since its inception in the mid-1990s, the EAI market has seen dramatic growth as more and more companies start to understand and appreciate the value of better integration throughout their business operations. The concept behind it is essentially very simple – improving communications between different applications, systems and environments makes it possible to achieve higher levels of automation, efficiency and quality of service throughout the fundamental processes driving business. New applications can be brought to market faster and hence deliver results more quickly.

As the millennium turned, the widespread economic downturn forced more and more companies to focus on the bottom line, which provided another major driver for improved integration. The attraction was to improve the return on existing investments rather than to support the delivery of new ones. Streamlining and automating existing business processes, both internally and across the entire corporate value chain, offered a reduction in operating expenses and improved profit margins. It is no coincidence that even over the difficult climate of the last few years, enhanced integration has been at the top of IT priority lists at many companies.

The EAI market has changed considerably throughout its evolution. The market has suffered from hype and manipulation, with new concepts and ideas being propounded at increasing speed by vendors and analysts keen to raise their profile in this attractive market, sometimes with scant regard for users' actual needs. The resulting confusion has caused many companies to stumble forward in a cloud of marketing and sales activity.. As the market matures, standards have emerged, bringing a level of clarity to the confusion while at the same time drastically changing the EAI cost / benefit model. These standards themselves have matured and become more widely adopted, fueling a new collection of standards-based EAI vendor that operate with less of the investment overhead of the incumbents.

What effect will these developments have on the ongoing market for EAI software? Will these changes be long lasting or are they just transitory? Do they represent a major shift in the market or are they just another set of minor perturbations?

This paper discusses these issues and their effects, and looks ahead in an attempt to predict how the EAI market might develop in the future.

3.0 EAI Market Dynamics

To understand the state of the market and the direction it will take over the next few years, a lot can be learned by observing the dynamics of the market from its inception. This includes looking at the market taxonomy covering the different segments of the technology, the extent of adoption of that technology and the changes in the competitive approach to the market as a whole.

3.1 Market Taxonomy

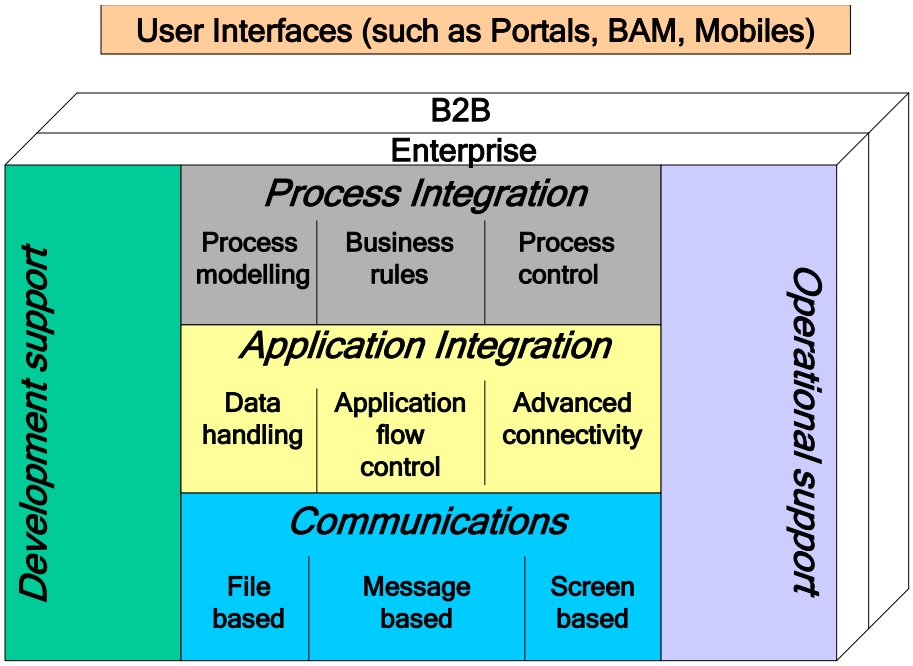
One thing that has changed drastically over the last few years is the definition of the EAI market itself. Following the development of asynchronous message-oriented middleware (MOM) in the early 1990s, which made communications both easy and decoupled between heterogeneous platforms and applications, technology was added on top of the MOM layer to enable packaged applications such as SAP, Siebel and PeopleSoft to link more easily with legacy and newly developed Web and workstation-based applications. This new technology integrated these enterprise applications together – that is, it offered Enterprise Application Integration (EAI). At this stage, EAI consisted of a MOM communications pipe, adapters and connectors with which to access source and target components, transformation engines to map information formats between sources and targets and some intelligent routing capabilities. If MOM was Phase 0 in the EAI marketplace, the packaging of this list of functions into 'message brokers' was Phase 1.

The early EAI market was characterized by infrastructure sales consisting of highly-priced software (due to the small number of competitors) and substantial consulting costs often at a ratio as high as 5 to 1. Two things happened that caused one of a number of major transitions in the marketplace. First, competition intensified with new players constantly entering the market, and second, more IT budgets were moved under business unit control.

The EAI vendors were quick to realize that to sustain revenue growth they would have to climb the value stack as quickly as possible to differentiate their offerings from the competition, while at the same time moving to a more business-oriented value proposition. All of a sudden the talk in the marketplace was about business process integration/management/automation (BPI/BPM/BPA), with the story being one of business process flowcharts created by business analysts that were somehow mapped down to the underlying IT components and programs. Some vendors actually did seem to understand what business processes were all about, whereas others have clearly been guilty of just 'putting lipstick on the pig'- making cosmetic changes to be able to claim some sort of business process functionality.

Another main cause of transition in the EAI market at this time was driven not by the vendors but by the users – the people actually implementing EAI solutions and moving them into production. Many user companies found that there were major holes in the product offerings in the 'real-world' usage such as migration, coexistence and production operations support. The assumption on the vendors' part was that once everything was engineered to use the new EAI technology then life would be fine – but in reality many companies cannot afford a big bang approach to any new solution because the business risk is too great. The old must live with the new for a number of years in many cases, reinforcing the need to support older means of integration such as file transfer, screen-scraping or data integration. In addition the sort of production tools required by most installations, such as monitoring tools, were considered by most EAI vendors as an afterthought.

The result of these different influences on the EAI market can been seen in the modern view of the marketplace illustrated in the diagram below.



Companies that want to implement an EAI strategy often have to consider each aspect of this taxonomy to determine the best approach. Generally this involves working with more than one vendor – for instance the EAI vendors are reluctant to spend resources trying to address the bottom layer, preferring to leave this to the implementer or use partner offerings. It is the higher layers that receive most of the EAI vendors' attention due to the linkage of these layers to business value.

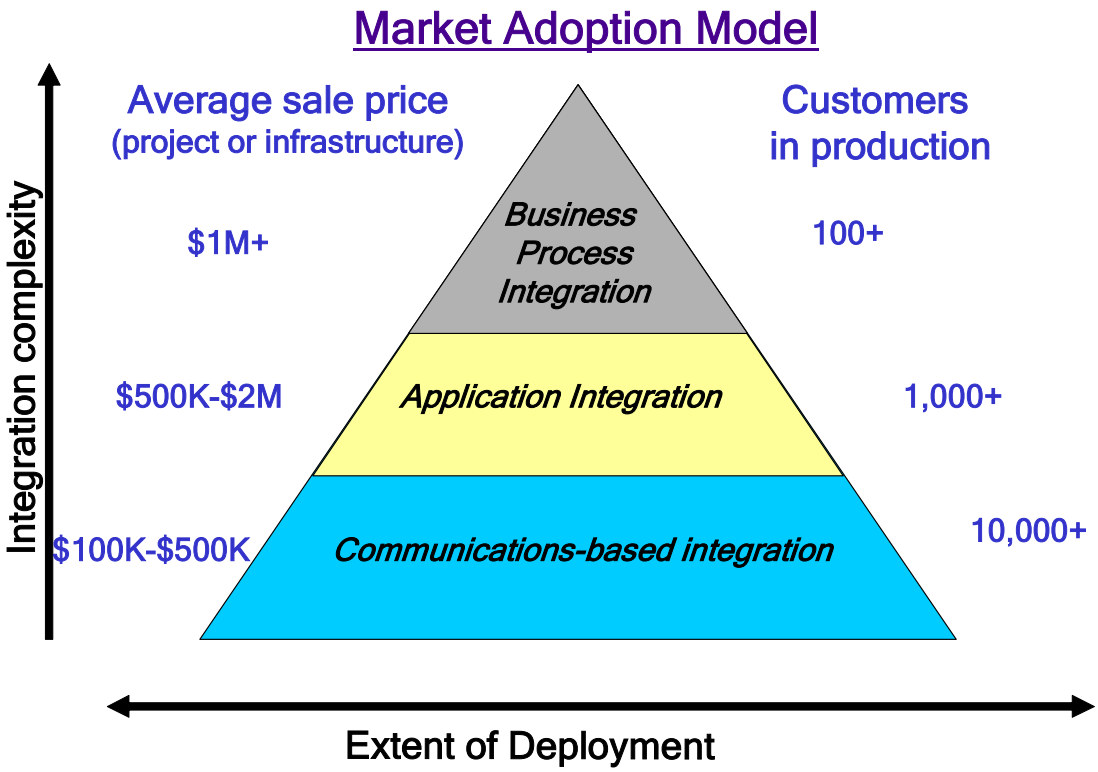
This picture, then, represents Phase 2 of the EAI market. But does this mean that companies looking to implement integration solutions should be analyzing the solutions offered across all these segments? Should the

support a particular vendor gives for business processes be as important a consideration as support for file transfer? The answer is that although all of these segments might be of interest to an implementer in the long term, in the short to mid term there are probably other factors to consider.

3.2 Market Adoption

The EAI market has been subjected to an enormous amount of marketing hype, and it is important to cut through this and get a clear picture of where the market actually stands today. The vendors continue to push their value propositions up the stack to increase their leverage with the 'business' decision makers, and also to sustain their price levels. A layman could be forgiven for thinking that the most important consideration in purchasing an integration solution is that it supports business process management effectively. However the reality is that it is the lower layers that are of more importance today, and this is likely to remain true for the majority of EAI customers for some time.

The illustration below is a simplified representation of the market adoption today.



There are many reasons for the delayed rate of starting the EAI journey or moving up the stack. Some of the major ones are:

- The need for rapid ROI vs. long-term gain
- The difficulty of incorporating legacy systems
- The need for scarce (and hence usually expensive) skills
- The increased level of business risk

In the current economic climate, return on investment is essential and payback times need to be rapid. This creates a bias toward the simpler forms of EAI over high-function infrastructure solutions. Integrating with legacy systems is also a struggle, with only the major applications receiving focus from solution vendors. Specialized solutions such as industry-vertical specific or custom developed ones tend to still need substantial work to integrate successfully. This in turn exacerbates the need for expensive technology specialists

Finally, the whole aspect of business risk can be a problem for EAI planning and implementation. Obviously, any implementation of new technology comes has an associated level of business risk. However risk is magnified in the case of EAI by a number of factors:

- EAI technology had traditionally been very complex, and hence prone to error
- Many EAI vendors are relatively young and small, introducing risk of lock-in combined with unsure vendor longevity
- Future application integration needs could require extensive custom coding, resulting in quality, support and time-to-market issues
- Integration projects typically rely on external consulting services (often far outstripping the software in terms of costs) rather than utilizing existing in-house resources and building a skill base in the new solution

3.3 New (and old) challengers

From the above discussions the picture seems to be one of an EAI market where the EAI vendors are luring customers up the value stack towards the promised land of full-scale integration of every business process that is fundamental to the company's operation. Although the pace along this journey is not nearly fast enough for the EAI vendors everyone agrees on the approach and the steps in the journey – don't they?

The answer, is of course, "no." As often happens in business, when there is a market with large revenues and strong year-on-year growth, there are challengers who are trying to move in. The last few years have seen more transitions in the EAI market as a number of alternatives to the accepted approach have fast gained credibility. In increasing order of importance, three of the main alternatives are:

- Workflow vendors entering the EAI space from above
- Old technologies being revived on a pragmatic basis
- Solutions built around emerging standards

When the EAI marketplace expanded to cover the concept of business process management beyond the more technical requirement to interface to different packages and solutions, it offered a bridge to allow the workflow vendors to enter the picture. These companies have built their reputations on being able to work at the business level with clients, helping them to organize their business processes and work practices in a more automated and efficient manner. By adding some basic EAI technology to their solutions, either developed internally or through partnerships, these companies are now starting to put pressure on the EAI market by threatening to unseat the traditional EAI vendors.

Another threat to the broader aspect of EAI activity is the resurgence of traditional technologies. Although the hype surrounding EAI managed to persuade buyers that this type of technology was all new, it has been around for some time. Particularly with the weaker investment cycles forced on buyers through the general macroeconomics of world trade over the last few years, companies have re-examined their existing investments in such technologies as file transfer and data integration.

However, the biggest challenge to the incumbent EAI leaders is the emergence of standards within the market and the corresponding entry of nimble, fleet-footed vendors offering modern, standards-based solutions with support for key environments such as the Internet and Application Server platforms

4.0 The standards effect

Software markets tend to follow the same basic pattern. As a new market is created by the development of a new, viable technology, (assuming the technology has real value, of course) a host of vendors both new and old start to develop and offer products based on the new technology. These products implement the technology however they see fit, based on the requirements as perceived by the vendor in question and the creativity and expertise of the individual development teams. The result is a set of proprietary solutions, with pricing dynamics based on the extent of investment in building the new technology.

Next, assuming the market grows, the issue of standards starts to appear. There are a number of reasons for this:

- Proprietary vendors with market share strength are always keen to see their own implementations declared as the standard, giving them competitive edge
- New entrants to the market want standards to make the implementation job easier and better defined
- Standards bodies normally contain technical evangelists who see it as their personal duty to create standards for the industry
- End user companies like the idea of avoiding vendor lock-in if possible since this reduces risk and prices

Somebody somewhere defines standards. This is the critical point in the software market development. One of two things happens at this stage. Either the standards gain a high level of support forcing proprietary vendors to adopt them to remain competitive with new entrants, or the standards are ignored by all but the most ardent

fanatics. Usually the latter outcome happens when one technology implementation has dominant market share and becomes the *de facto* standard, more by presence than any other form of industry support. Another possible inhibitor to standards acceptance is that standards cover only a subset of the available functionality in proprietary implementations. This is not unreasonable since, to gain acceptance, it is important that the standard satisfy the 'lowest common denominator' of functionality implemented in the majority of proprietary solutions. The issue is one of how well this subset of functionality satisfies market needs. An obvious example of this is TCP/IP, accepted for some time now as the ubiquitous standard for intercommunication. In fact the 'real' standard as defined by one of the standards bodies was OSI/TP, but hardly anyone implemented it because TCP/IP already had a massive presence.

Standards have been appearing in the EAI market over the last few years, so the key question now is – will they be ignored or are they here to stay?

4.1 Standards in the EAI market

The EAI market in its broadest sense covers all aspects of business integration. This is a market where standards make an enormous amount of sense. Some of the generic drivers for standards have been touched upon already, and of particular relevance in this market is the avoidance of vendor lock-in. Many of the EAI vendors are companies created solely to serve this market, and most are either making heavy losses or only just approaching profitability. Also, the market is seeing a lot of consolidation with numerous acquisitions over the last five years. These two factors clearly raise the question of vendor longevity and therefore being locked in to a proprietary vendor technology represents a considerable business risk.

There are special considerations for standards in this market, stemming from the requirement to link together systems across the entire value chain:

- The need to integrate processes across third-party as well as internal systems
- The need to be able to connect to any or all of the internal applications and packages
- The need to support the various transaction processing environments such as TP monitors and application servers
- The need to potentially offer services for external usage
- The complexity of EAI technology, and therefore the increased level of opportunities for 'black-box' functionality

There has been considerable activity in the standards arena around EAI. The first development to affect the EAI space was the emergence of XML as a self-defining way of formatting data. Instead of requiring every company or department to implement a proprietary set of data formats, a standard way can specify the formats that can be understood by any other system. XML has quickly become a way of dealing with information flowing between different parts of the business process and has considerably reduced the extent to which transformations are required.

With the popularity of Java-based application servers as a way to build modern applications, many EAI standards have stemmed from the Java movement itself. For example the JMS (Java Messaging Service) specification is implemented by thousands of companies. JMS has gained such a strong mindshare in the market that other MOMs such as IBM's MQSeries have had to offer a JMS implementation. The secret to the popularity of JMS implementations is that they combine a level of functionality suitable for almost all market needs with an attractive price point plus the added security of virtual vendor-independence since JMS is a defined standard.

The J2EE Connector Architecture specifications has gained significant traction, largely because the intention of providing a standard for interfacing to applications. When the specifications are completed and enough large application packages implement them, JCA will also remove a considerable amount of effort in the integration implementation cycle. The development of custom-built adapter code to integrate with in-house packages and applications is often the largest, most complex and error-prone part of any EAI implementation, and even once the project is delivered it still incurs considerable maintenance costs.

Finally, Web services collectively covers a range of standards specifications (SOAP, UDDI, WSDL) that are also aimed at easing the entire job of integrating applications and business processes together. The idea is to provide a standards-based way for business services to be described, published, discovered and accessed both within and across company boundaries. Supporters of Web services predict a future of globally available business process or sub-process services, accessed through a global directory and usable by any company anywhere. However the reality is less than this today, and it is likely that Web services will be used internally or within private networks for several years.

4.2 The impact of EAI standards

Standards make a great deal of sense in the EAI space, and as a result they have established a considerable presence in the market already. Virtually all RFPs issued by prospective buyers of EAI software today have a section on standards implementation and/or direction. So how has the emergence of these standards affected the market and what is likely to happen in the future?

The XML standard has generally been embraced with open arms by both EAI vendors and end users. Most EAI offerings include a transformation engine to map the data formats used by the source application to those used by the target application, but what most vendors do is map the source data into an XML format, pass the information around internally in this format and then map from XML to the target data format. This is a much more flexible approach and is easier for the vendor to handle. From an end user point of view, this is also very satisfactory because as more data formats are switched to an XML format they can just be plugged straight into the EAI tool. XML offered a win/win for both vendors and end users.

The Java-based standards (JMS, JCA, etc) have also achieved considerable mindshare in prospective buyers' minds. However, unlike the XML standards, they have encountered resistance amongst the proprietary EAI vendor community. This resistance is not always in the form of direct opposition, but it is clear that some of the early EAI vendors are not fully behind these standards even though they may pay lip-service to them. The first issue is that these early vendors have created their own proprietary solutions to the EAI technology problems, and software developers are notoriously biased when it comes to alternatives to their designs. They try to hold a position that standards fall functionally short of the proprietary solution in question. However this argument misses the point entirely. Standards focus on addressing the generic market requirements, and provided they do this effectively any additional functional 'bells and whistles' are irrelevant.

The vendor-internal business reasons behind the concerns of the proprietary EAI players go much further to explain their resistance to standards:

- Adopting the standards will be costly to the vendor in time and money
- Many of the vendors' competitive differentiators are perceived to be in their own unique implementation and standards level the playing fields
- Standards may make it easier for a customer to switch to a competitive offering (that is, vendor lock-in is weakened)
- Because existing customers might already be using function not covered by the standards, vendors have to support both old and new designs and interfaces

But standards appeal very strongly to a different breed of EAI vendor. A number of more recent EAI vendors have gained significant market traction by taking advantage of the standards specifications to produce almost completely standards-based EAI offerings. These vendors have already built up impressive lists of large-scale successful implementations of their standards-based offerings and are seizing growing shares of the EAI market. In addition, a number of application server vendors who have had to rely on partnerships with the proprietary EAI solutions have become aware that they can now offer basic EAI technology cheaply without having to spend years investing in complex design. However this latter group of vendors is unlikely in general to develop leading EAI components since they have many other areas on which to focus. Instead it is far more likely that they embed standards-based EAI solutions from these 'new breed' standards-based EAI vendors.

The standards-based EAI vendors gain the benefit of operating on a very different financial basis from the proprietary vendors. First, the standards definitions bound the development challenge quite tightly, avoiding the need for swathes of function that may or may not be of interest to most customers. Second, since the standards definitions are implemented widely by definition, they tend to raise the overall quality of the solution being built when compared to a completely custom approach. In addition, the starting design point for these vendors is standards-based, as opposed to the situation for the proprietary vendors where supporting the standards often requires a force-fit of a proprietary approach with a standards 'simulation' bolted on. Therefore these new vendors

tend to have a more efficient and productive implementation since they do not have any old interfaces or design assumptions to maintain.

There is an important point to be made here on competitive differentiation. It may appear that all standards-based offerings will be much the same, since they all implement the same standards. This is, in fact, not the case at all. Standards definitions tend to cover the interface specifications at a technical level, in other words they cover the 'what' that has to be done, but not the 'how'. This leads to one of the major area of differentiation for standards-based vendors – the implementation itself. So for standards-based vendors this means that investment can be focused on such key areas as ease of use, performance, scalability, security and indeed the overall design used to achieve the required functionality.

Taking these points together, the summary result is that these new standards-based vendors offer EAI products that generally:

- Offer a considerably lower price point
- Implement standards in an optimal fashion
- Rely on the quality and effectiveness of implementation as differentiators
- Demand a more generally available set of skills
- Can be substituted if required with relatively little effort

4.3 Standard approaches

So far, consideration has been given only to technical standards – that is, standards largely covering interfaces and protocols. However there is another very important area of developments in the EAI market that is not so much focused on the mechanics of how one component interfaces with another but instead covers the way that the integration task is carried out, sometimes referred to as the integration architecture or model. As EAI has matured a number of specific approaches to integration have emerged that are fast becoming standard, although with a lowercase 's' (not defined by any official standards body). One of the key ones is the service-oriented architecture (SOA) approach.

In an SOA model, the principle is that separate business operations or process steps are packaged as much as possible as self-contained components or 'services'. This has strong similarities to the old object-oriented programming concepts, but, instead of the encapsulated component being a program or a piece of code, it is a set of pieces of functionality making up the service in question. In addition, an SOA model frequently operates on an event-driven basis, very much as a traditional business process does.

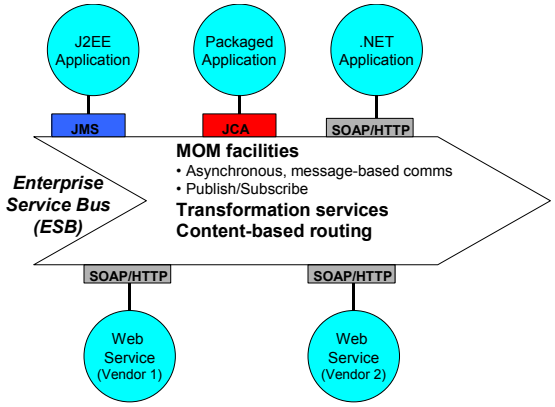
The SOA approach has some fundamental advantages when applied to integration solutions:

- It offers a high degree of reuse
- It contributes to raising the overall quality of service for the new solution
- It provides a highly flexible and adaptable implementation
- It allows IT operational flows to more closely reflect the way the business operates

Every business operation in an SOA environment is broken down into the basic set of services, which in turn form building blocks that can be used to assemble new solutions. The connectivity and integration of the components within these encapsulated services, and indeed of the services themselves, is provided by the EAI technology. Once the business services have been created, they can be viewed as self-contained black boxes with well-defined inputs and outputs. This is what delivers the flexibility, adaptability, quality and reuse. In an SOA environment it becomes a simple matter to switch a particular service for a new one as part of an overall business process. Indeed, because of the power of EAI, the new service might not even be internal but could be provided by a third party instead.

Developments around the SOA context over the last few years are proving very fruitful, and are already influencing the direction of the EAI market. Perhaps one of the most interesting ones is the concept of an Enterprise Service Bus (ESB) – an example of what Gartner Group calls an enterprise nervous system (ENS) backbone. This is the melding of SOA principles with EAI technology, taking advantage of developments in the broader standards area too, to produce an enterprise integration backbone throughout the value chain with services socketed onto it as required. These services can be running in any environment (J2EE, .NET, Legacy, Packaged application, etc.), either within the enterprise or in a partner company. Connectivity to these environments, presentation of data structures and navigation between the services are controlled by the EAI technology.

The diagram below illustrates the ESB concept:



Essentially, an ESB delivers a powerful, affordable, standards-based backbone throughout the enterprise and partner companies that smoothes the operational path of the processes running the business and reduces the time, effort and cost of integrating the different components that underpin these process steps. One of the most powerful benefits that this type of approach can deliver is that it allows in-house development teams to build new applications that are already 'integration enabled' and can easily be socketed into the ESB as required. Not only does this save a lot of investment on expensive skills, but also it has a significant impact on time-to-market for new initiatives.

5.0 Assessing the outcome

The advent of standards has caused extensive turbulence in the EAI market. But how will this play out? Will the disruption fade away with little lasting effect? Or has this changed the face of EAI forever?

5.1 EAI standards

The answer to these questions lies in the fact that the EAI market has gradually swung from being one driven and controlled by the EAI vendors to one where the end users and the prospective EAI buyers are far more in control. This often happens in markets once they have moved from serving visionaries and leading edge customers to serving the majority of buyers. Recapping some of the major items on the buyers' wish-list discussed previously, top concerns are:

- The need for rapid ROI vs. long-term gain
- The difficulty of incorporating legacy systems
- The need for scarce (and hence usually expensive) skills
- The increased level of business risk

This list illustrates why standards have established such a strong grip in the minds of today's EAI buyers, in the sense of technical standards such as XML and JMS and also the standard EAI models such as SOAs and ESBs. Standards address all four of the concerns listed above. In the case of ROI, the emergence of standards forces prices down, while at the same time removing cost from the ROI equation through less expensive skills and reduced requirements for custom code. Standard EAI models such as the ESB enable companies to build applications that are already 'integration-enabled' using in-house skills. Also standards-based offerings can be quicker to get going, being usually more 'out-of-the-box' functionality since there is generally less functional complexity. These factors improve the overall return and the speed of payback in the ROI calculation.

Incorporation of legacy systems forms one of the largest components of any EAI project, with specialized adapters either having to be built or bought and then tailored to match existing system needs. Both the J2EE Connector Architecture and more recently the whole Web services area of standards offer the potential to make dramatic changes to this situation.. As JCA really takes off, for example, then pressure is on application package

vendors to create a JCA interface to their offerings, making it easier to integrate these packages into new process flows. As far as Web services go, it is unclear at this time exactly how much work is likely to be saved by being able to 'wrapper' a legacy application as a Web service, but potentially this should also reduce the time, effort and business risk of legacy system integration.

The adoption of standards has a simplifying effect on skills requirements. Instead of the market needing pools of people skilled in all the various proprietary implementations of EAI, it tends to reduce this need to one single pool of people skilled in the standards. For example, knowing how to use a particular message server becomes understanding how to use any JMS-based server. The result is that since less specialized skills are required, the overall skills requirements are reduced and the skills that are required are likely to be more affordable.

Finally, and perhaps most importantly, the adoption of standards has the potential to reduce business risk considerably. There are a number of reasons for this:

- The reduction in need for custom-built code reduces the risk of error and also brings down maintenance costs and hence the total cost of ownership.
- The reduction in requirements for rare skills reduces the exposure of these employees leaving the company.
- Since standards implement some level of design in exactly the same way in all products then the areas of design covered by the standards are to some extent 'burnt in' and hence likely to be of improved quality.
- The flexibility of vendor choice and the ability to change vendors without completely disrupting implementations ensures that the risk associated with vendor lock-in is lowered considerably.

The long-term value and presence of standards has been reinforced over the last few years by the success of the new, standards-based EAI vendors, both in terms of company performance (often showing growth rates in excess of 100% while other EAI vendors are experiencing falling revenues) and successful deployments, and the increasing seriousness with which some of the market leaders are adopting the standards. Most of the proprietary EAI vendors were quick to include support for the new standards in their offerings, but often the implementation was simply cosmetic, with performance and usability issues. There are definite signs that some of these vendors are now making efforts to deal seriously with the standards, either by significantly rewriting their implementations or acquiring standards-based solutions. This latter course of action can just increase the problem if it results in the vendor having two divergent solution strategies – the key is how well the vendor then converges the technologies.

So it seems clear that standards in the EAI space are truly here to stay. They raise the appeal of EAI solutions while at the same time making it more likely that EAI implementations will prove to be sound business investments.

5.2 Choosing the winners and losers

Since standards truly do seem to be here to stay in the EAI market, causing all of the upset and activity discussed in the previous sections, then what does this mean in terms of winners and losers within the market? More particularly, for a company either implementing EAI for the first time or looking to make additional investments in EAI for new projects, how does all this standards activity affect the buying decision?

It may seem on the surface that the answer for the company already using a particular proprietary vendor and looking to expand that usage is obvious, namely that the same vendor should be used. While this could well be true if the expansion in usage is to provide more capacity for an existing project, it may not be the case if a new project is being implemented. Almost all EAI vendors have some level of interoperability with each other, so the projects can be linked together even if different technologies are used. For instance, it is not uncommon for companies to use one vendor for mainframe-oriented EAI projects but to use another for Web-centric ones. However the skills question is liable to be relevant here – if a company already has a large pool of skills in the proprietary technology then it may be more advantageous to stay with this rather than having to bring in a new (even if cheaper) pool of talent.

The real issue is come down to how well vendors will satisfy the business needs and with what level of ROI balanced with risk. It may be for instance that companies are prepared to pay a considerably higher price for mission-critical software that can be trusted with the most essential parts of business operations, whereas collaboration-style solutions with less stringent service requirements might be much more price sensitive.

The challenges for the proprietary EAI vendors (and those with the biggest share of the market today) are to find ways to embrace the standards as efficiently as possible while ensuring that coexistence with the proprietary implementation is easy. This may be very painful for some of these vendors – for example, the most common pricing model employed is to charge relatively little for the basic server-type EAI functionality but to charge quite heavily for adapters for different packages and environments. Providing quality support for J2EE Connector Architecture and Web services and taking an active role in driving the standards forward threatens a major part of the revenue stream. Also, since the standards are evolving and are generally less functionally complete than proprietary implementations, providing an optimal implementation of the standards while still maintaining smooth coexistence with the existing solution can be real headache.

Application Server vendors implement some level of EAI functionality internally, but in the end will remain reliant on partnerships with other EAI vendors for practical solutions. In general this will translate to the standards-based EAI vendors, and in particular the ones who have adopted an SOA approach such as delivering an ESB. There are two main reasons behind this claim. The first is that Application Server vendors' prime area of interest is, naturally, in selling more copies of the application server platform and tools. The focus is therefore on ensuring that integration within their own platform works. In fact, offering the customer integration with another platform is often seen as a 'Bad Thing'! As a result it is frequently the case that integration with other environments (and

especially with other application server platforms) is poor. For example, it is often the case that due to differences in implementation, a Web service under one Application Server vendor's control cannot be invoked by another one's platform. It is this sort of problem that an ESB addresses very effectively. The second reason is that EAI is a complex area to implement well, and Application Vendors will never be particularly focused on this area because they do not see it as an area of core competitive competence.

For the standards-based EAI vendors, although they have the luxury of having already adopted the standards with all the benefits discussed previously, the challenges are different. The winners will be those who can differentiate themselves through their implementations, for example providing production-quality values such as performance, scalability and security while at the same time remaining adaptable and retaining their superior ease of use and ROI. The table below summarizes the likely winners, and points of consideration to use in selecting an EAI solution, whether for the first time or for a new project.

Likely winners in the post-standards marketplace

Proprietary EAI vendors who:	*Standards-based* vendors who:

• Actively support standards
• React quickly
• Implement standards efficiently
  ○ Performance
  ○ Scalability
• Handle coexistence / convergence
	• Build superior mission-critical values
	  ○ Performance
	  ○ Scalability
	  ○ Security
	• Adopt the most successful standard approaches
	  ○ SOAs
	  ○ ESBs

6.0 Summary

The EAI market has redefined itself since its inception to encompass the functionality necessary to support business integration. EAI includes areas such as messaging, application integration, process integration and workflow. The power has gradually shifted from the vendors to the buyers and implementers, and this fact combined with the importance of integration as a business priority and the inherent complexity of EAI technology as a whole, has made the EAI market fertile ground for the development of industry standards.

These standards have made the jump from academic exercises in technical purism to important initiatives in raising the overall value of EAI, and have already achieved widespread acceptance and adoption. Standard models for getting the best out of EAI have also emerged. These developments have significantly affected the dynamics of the EAI marketplace. Current market leaders are trying to claim compliance with minimum effort,

other vendors are leaping on the standards bandwagon to seize a share of this highly lucrative market, and end users are enthused at the thought of consistent, standards-based offerings, all competing on a level playing field, forcing down prices and reducing the level of business risk.

Not all the vendors will survive this change. Current leaders might not step up to the standards challenge while others will ensure future success. New entrants will live or die based on how well they can establish a real presence and prove their ‘big player’ credentials. However the one certainty is that end user companies implementing solutions in the new, standards-based EAI world will be the big winners.

Appendix

About the EAI Industry Consortium

The EAI Industry Consortium is a non-profit global advocacy group, developed to promote Enterprise Application Integration through sponsored research, the establishment of standards and guidelines, best practices and articulation of strategic and measurable benefits. This member driven consortium, designed as an EAI information hub, encompasses marketplace education, resource tools and EAI trends, and provides members a venue to develop, share and debate.

The Consortium can be found at www.eaiindustry.org.

About the author – Steve Craggs

Steve has spent over 20 years in the software business since graduating from Oxford in Mathematics. For the majority of that time Steve worked for IBM where he had various programming, product management, strategy, marketing and sales roles, culminating in Steve becoming the worldwide executive in charge of IBM's MQSeries business, the market leading set of EAI offerings. Steve then left IBM to build an application integration business for Candle Corporation before leaving in 1999 to found Saint Consulting, a management consultancy specializing in the business integration software area. Often referred to as 'the father of messaging', Steve is well known in the business integration industry, appearing regularly in the press and presenting at seminars and trade shows. In 2002 Steve was appointed to the European Chair of the EAI Industry Consortium, a not-for-profit global advocacy group for all companies involved in EAI.